

# ONE RAILWAY GAUGE COAST TO COAST COMPLETION OF KALGOORLIE TO PERTH LINK

## Historical Development

The original 618 km 3ft 6in narrow gauge railway joining Fremantle and Kalgoorlie was completed in 1897. By an unfortunate accident of history the five mainland states had built their railways on three different gauges. Queensland and Western Australia had built narrow gauge railways, NewSouth Wales standard gauge (4ft 8½in) and Victoria broad gauge (5ft 3in), while South Australia had both broad gauge and narrow gauge. Over the years various Royal Commissions and committees of enquiry have investigated the possibility of a standard railway gauge throughout Australia. The Commonwealth Parliament in December 1911 passed legislation authorising the construction of a standard gauge railway from Port Augusta to Kalgoorlie. Construction commenced in 1912 and the line was completed in October 1917. Although some progress was made in other states it was not until 1962 that construction of the Kwinana to Kalgoorlie standard gauge railway commenced. The catalyst for this initiative was the conclusion in 1961 of an agreement between the Western Australian Government and BHP Co. Ltd for the development of an integrated iron and steel works at Kwinana. This was contingent upon the construction before the end of 1968 of a standard gauge railway from Kwinana and Fremantle to Kalgoorlie connecting to BHP's Koolyanobbing iron ore deposit.

## Project Planning, Design and Construction

The project was a major undertaking which required a planning commitment of considerable magnitude and complexity. A special planning section was established by the Western Australian Government Railways (WAGR) a predecessor of the Public Transport Authority. A senior departmental officer, the Co-ordinator of Standard Gauge Railway, was appointed to be responsible for all aspects of planning. Because of the size of the project WAGR appointed engineering consultant Maunsell and Partners to assist with the planning and to design and supervise the construction of a major part of the civil engineering work. WAGR branches were responsible for the design and installation of signalling, telecommunications, power and lighting services and the procurement of ballast and rails and rolling stock. The project total cost was \$160 million.

From West Midland, dual gauge tracks, each line having three rails, carrying both narrow and standard gauge (1067mm and 1435mm) trains, were constructed to the Kewdale and Forrestfield marshalling yards. The standard and narrow gauge tracks continued southwards to Kenwick with the standard gauge track diverting in a south westerly direction to Cockburn Junction. A northern branch then connected to Fremantle port and a southern link was constructed to Kwinana. A new diesel locomotive depot was established at the Forrestfield site together with other installations required to service freight and passenger rolling stock.

Most of the construction work was carried out by contract. A total of 65 major civil engineering and building works contracts were awarded over the period 1962 - 1970 mainly to Western Australian based companies. Thiess Bros Pty Ltd, initially in association with Perron Bros, was awarded the major share of the civil engineering contracts.

## Eminent Persons Associated With The Project

Sir David Brand	Premier of Western Australia	1959 - 1971
Sir Charles Court	WA Minister for Railways	1959 - 1967
Mr Cyril Wayne	WAGR Commissioner	1959 - 1967
Mr John Horrigan	WAGR Chief Civil Engineer	1962 - 1967
	WAGR Commissioner	1967 - 1971
Mr Ian McCullough	Asst. Chief Civil Engineer	1963 - 1966
	Chief Civil Engineer	1966 - 1971
Mr Patrick Sands	Maunsell and Partners	1963 - 1972



Sir Charles Court



Mr Cyril Wayne



Mr John Horrigan



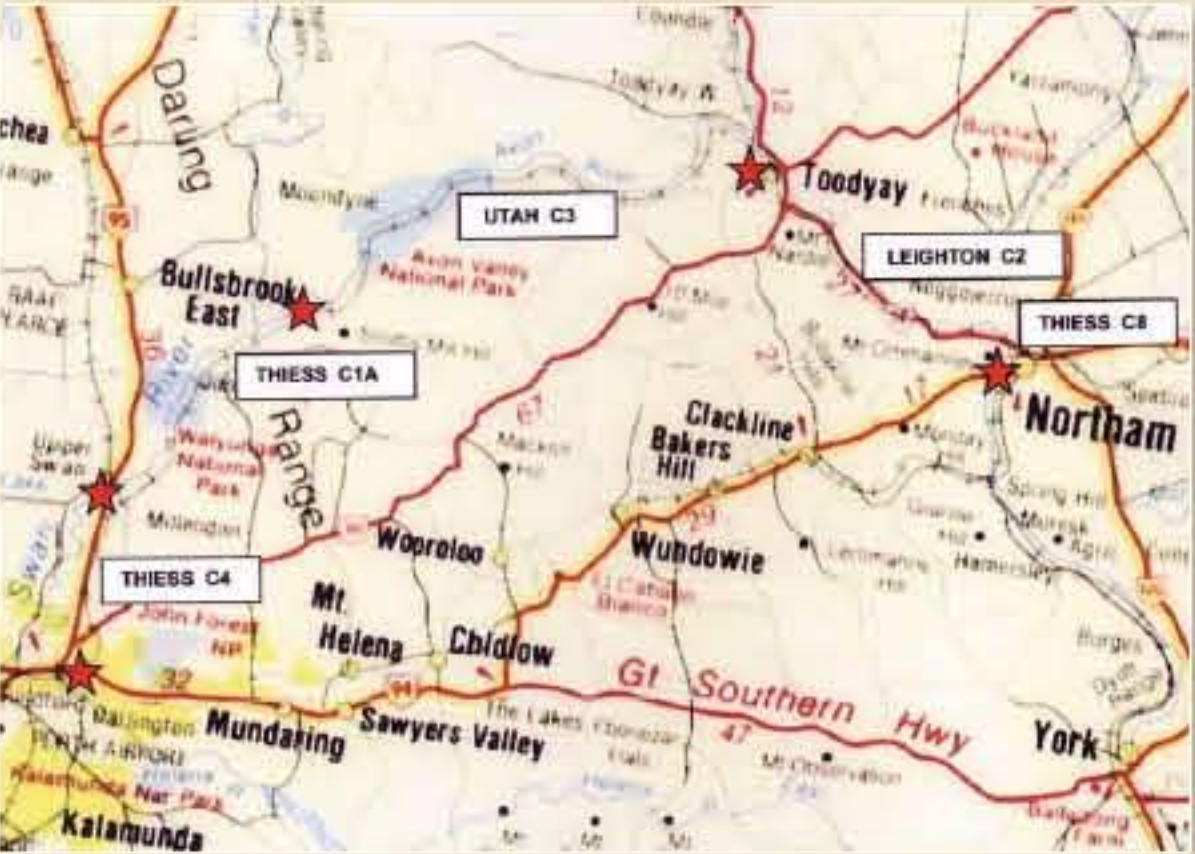
Mr Ian McCullough



5 November 1962 - Official Opening of the Project on Monument Hill  
The Premier, Sir David Brand, with Sir Charles Court looking on, about to push a plunger to initiate a blast to start excavation of the main cutting. The track to the right is the centreline of the proposed railway

## Avon Valley Deviation

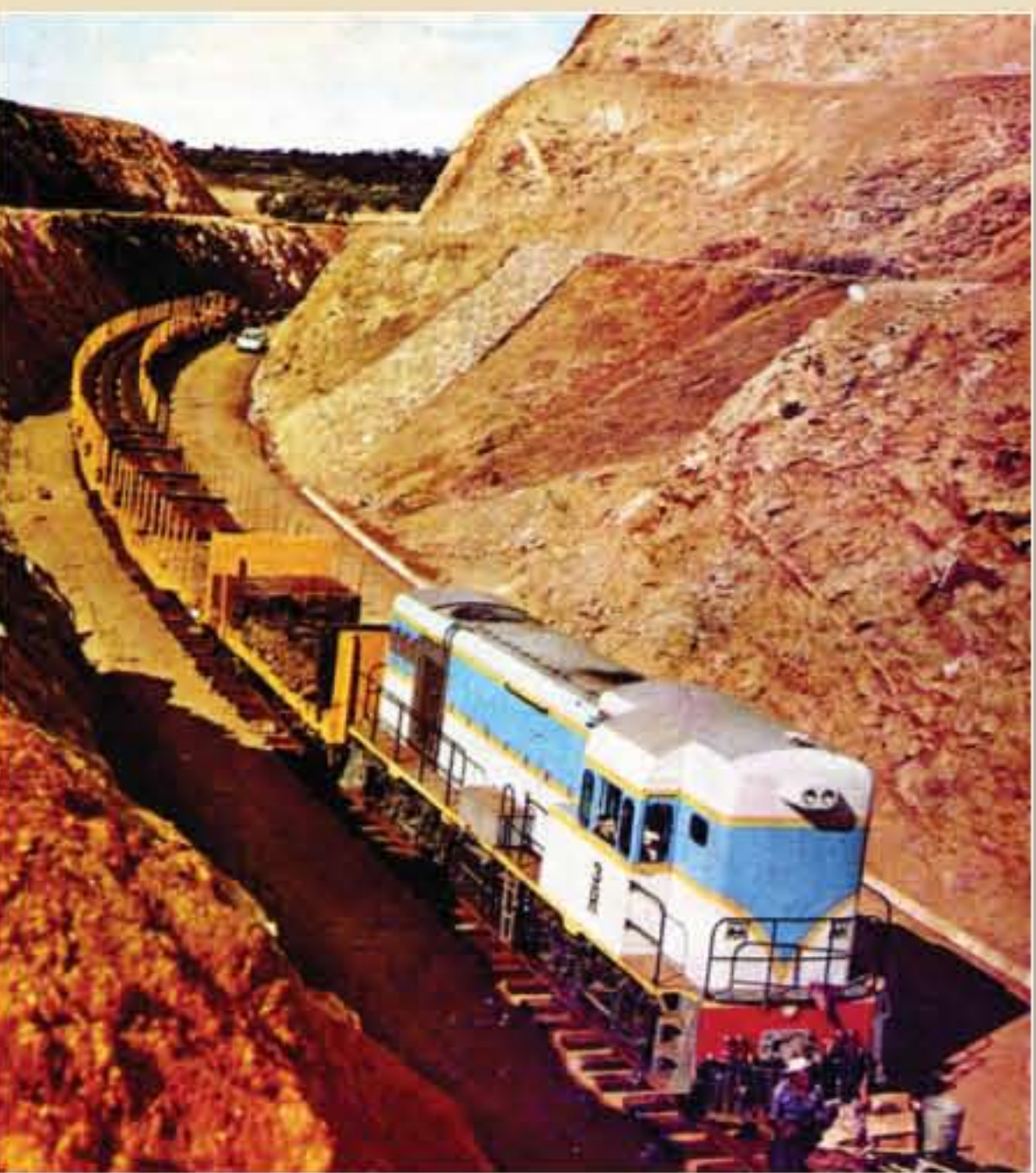
The adoption of the Avon Valley route through the Darling Range from Midland to Northam for both narrow and standard gauge trains enabled the abandonment of the steeply graded and sharply curved narrow gauge alignment from Bellevue over the Darling Scarp (through the Swan View tunnel) to Spencers Brook. The Avon Valley alignment has significantly more favourable grades and less curvature. The track is double dual gauge. Double tracks allow a train to run in each direction. Under this arrangement, all trains of both gauges to and from the Perth metropolitan area to the central wheat-belt, goldfields and interstate have the advantage of flatter grades and improved transit times. Complex engineering planning and field operations were involved in building this line and keeping the old narrow gauge track operating while the dual track was being constructed and commissioned. The civil engineering work was carried out by four main contractors, Thiess/Perron Bros, Utah Construction, E S Clementson and Leighton Contractors. Approximately 70 per cent of the excavation for the track formation was in rock, involving some of the deepest cuttings ever excavated for a railway project in Western Australia.



Avon Valley Deviation showing extent of Thiess C1A, C4 and start of C8, Leighton C2 and Utah C3 contracts



Excavating at Monument Hill Cutting, 1963



Track laying train in Windmill Hill cutting near Toodyay



Premier Sir David Brand driving the last 'gold' spike to link the standard gauge railway at Kalgoorlie, 3 August 1968  
(West Australian newspaper photo)



The completion of the Standard Gauge Railway from Kalgoorlie to Perth was declared in 2012 an Engineering Heritage National Landmark by Engineering Heritage Australia (the heritage arm of Engineers Australia) in recognition of its national engineering significance.



Forrestfield Locomotive Depot



Indian Pacific train passing through the Avon Valley  
The Indian Pacific passenger service on the standard gauge railway across Australia is one of the few railway passenger services in the world which crosses a whole continent without the need to change trains.



First standard gauge wheat train leaves Merredin, 11 November 1966